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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,549	04/19/2001	Soon-Cheol Shin	P56240A	7562

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EXAMINER

YUN, JURIE

ART UNIT PAPER NUMBER

2882

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/837,549	SHIN ET AL.
	Examiner Jurie Yun	Art Unit 2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 15 October 2002.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-12,18-22,28-40,43-45 and 50-52 is/are rejected.
- 7) Claim(s) 13-17,23-27,41,42 and 46-49 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 09/712,952.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4,5,6,7</u>	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 2, 4-8, 10-12, 18-22, 28-33, 35-40, 43-45, and 50-52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 7, 19, 20, and 21 of copending Application No. 09/712,952. Although the conflicting claims are not identical, they are not patentably distinct from each other because the only difference is "the vertical pitch of the plurality of real bridges decreases in a stepwise relation in a direction from a center portion of the tension mask to a peripheral portion of the tension mask" as opposed to "the vertical pitch of the plurality of real bridges becomes smaller in a direction from a center portion of the tension mask to a peripheral portion of the tension mask...the number of real bridges gradually increasing in the direction from the center portion to the peripheral portion of the tension mask." "Gradually increasing" implies a "stepwise relation" and means the same thing:

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Merriam-Webster
DICTIONARY

Merriam-
Webster

Atlas	Reverse Dictionary	Rhyming Dictionary
Dictionary	Thesaurus	Unabridged Dictionary

One entry found for **gradual**.

Main Entry: ²**gradual**
Function: *adjective*
Etymology: Medieval Latin *gradualis*, from Latin *gradus*
Date: 1692
1 : proceeding by steps or degrees
2 : moving, changing, or developing by fine or often imperceptible degrees
- **grad·u·al·ly** *adverb*
- **grad·u·al·ness** *noun*

Also, the tension mask comprised of opposing side portions of the tension mask located with respect to a center of the tension mask being symmetrical is well known and an obvious feature. This would be desired for achieving uniformity in image formation.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 3, 9, and 34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 19, and 20 of copending Application No. 09/712,952 in view of Moore (USPN 4,926,089). The copending Application No. 09/712,952 discloses everything except the plurality of slots being in a staggered relation with respect to corresponding dummy bridges of the plurality of dummy bridges adjacent to an opposing slot of the plurality of slots. Moore

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teaches this (Figs. 12 and 14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the copending Application No. 09/712,952 and disclose the plurality of slots being in a staggered relation with respect to corresponding dummy bridges of the plurality of dummy bridges adjacent to an opposing slot of the plurality of slots, as taught by Moore. As disclosed by Moore (column 13, lines 56-64), "The number of false ties may be chosen strictly on the basis of appearance (or lack thereof) under normal viewing conditions. For example, and according to the invention, each tie may be separated by an even number of false ties, the ties and false ties being arranged in a staggered fashion across the mask. Inserting an even number of false ties between pairs of real ties is preferred because it permits the staggered arrangement of real and false ties as shown."

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 7, 32, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Good et al. (USPN 5,583,391).

6. With respect to claims 1, 7, 32, and 37, Good et al. disclose a tension mask frame assembly for a color cathode ray tube, comprising: a tension mask formed on a

plate (24), the tension mask including a plurality of strips and including a plurality of slots (42) to separate by a predetermined distance corresponding adjacent ones of the plurality of strips; a plurality of real bridges (38) for respectively partitioning corresponding slots of the plurality of slots at a predetermined pitch interval by connecting adjacent ones of the plurality of strips; and a frame (34) for supporting the tension mask, whereby a vertical pitch of the plurality of real bridges in a center portion of the tension mask is greater than a vertical pitch of the plurality of real bridges in a peripheral portion of the tension mask (see Abstract). Good et al. also disclose the vertical pitch of the plurality of real bridges decreases in a stepwise relation in a direction from a center portion of the tension mask to a peripheral portion of the tension mask (column 4).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 21 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Good et al. (USPN 5,583,391) and further in view of Moore (USPN 4,926,089).

9. With respect to claims 21 and 45, Good et al. disclose all the elements except for a plurality of dummy bridges, each dummy bridge extending from a strip of the plurality of strips on at least one side of a corresponding slot of the plurality of slots in a direction towards a strip of the plurality of strips on an opposite side of the corresponding slot and

being formed adjacent to the corresponding slot that is defined by a corresponding one of the plurality of real bridges and corresponding adjacent ones of the plurality of strips. Moore discloses this (see Figs. 12 and 14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Good et al. invention and disclose a plurality of dummy bridges, each dummy bridge extending from a strip of the plurality of strips on at least one side of a corresponding slot of the plurality of slots in a direction towards a strip of the plurality of strips on an opposite side of the corresponding slot and being formed adjacent to the corresponding slot that is defined by a corresponding one of the plurality of real bridges and corresponding adjacent ones of the plurality of strips, as taught by Moore. As disclosed by Moore (column 1, lines 45-48), the use of tie bars (a.k.a. dummy bridges) is desirable for imparting a much needed substantial mechanical strength to a mask.

Good et al. also disclose the tension mask being partitioned into a plurality of regions in a direction from a center portion of the tension mask to a peripheral portion of the tension mask (column 4). Each region would correspond to the distance from any tie bar row to the major axis X.

10. Claims 2-5, 8-11, 18-20, 28-31, 33-35, 38-39, 43-44, and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Good et al. (USPN 5,583,391) and further in view of Moore (USPN 4,926,089).

11. With respect to claims 2, 8, 33, and 38, Good et al. do not disclose a plurality of dummy bridges, each dummy bridge extending from a strip of the plurality of strips on at least one side of a corresponding slot of the plurality of slots in a direction towards a

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strip of the plurality of strips on an opposite side of the corresponding slot and being formed adjacent to the corresponding slot that is partitioned by a corresponding one of the plurality of real bridges. Moore discloses this (see Figs. 12 and 14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Good et al. invention and disclose a plurality of dummy bridges, each dummy bridge extending from a strip of the plurality of strips on at least one side of a corresponding slot of the plurality of slots in a direction towards a strip of the plurality of strips on an opposite side of the corresponding slot and being formed adjacent to the corresponding slot that is partitioned by a corresponding one of the plurality of real bridges, as taught by Moore. As disclosed by Moore (column 1, lines 45-48), the use of tie bars (a.k.a. dummy bridges) is desirable for imparting a much needed substantial mechanical strength to a mask.

12. With respect to claims 3, 9, and 34, Good et al. do not disclose corresponding dummy bridges of the plurality of dummy bridges adjacent to a corresponding slot of the plurality of slots being in a staggered relation with respect to corresponding dummy bridges of the plurality of dummy bridges adjacent to an opposing slot of the plurality of slots. Moore teaches this (Figs. 12 and 14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Good et al. invention and disclose the plurality of slots being in a staggered relation with respect to corresponding dummy bridges of the plurality of dummy bridges adjacent to an opposing slot of the plurality of slots, as taught by Moore. As disclosed by Moore (column 13, lines 56-64), "The number of false ties may be chosen strictly on the basis

of appearance (or lack thereof) under normal viewing conditions. For example, and according to the invention, each tie may be separated by an even number of false ties, the ties and false ties being arranged in a staggered fashion across the mask. Inserting an even number of false ties between pairs of real ties is preferred because it permits the staggered arrangement of real and false ties as shown."

13. With respect to claims 4, 10, 18, 28, 35, 39, 43, and 50, Good et al. disclose a portion of the tension mask to one side of a center of the tension mask being symmetrical to a corresponding portion of the tension mask located to an opposing side of the center of the tension mask (Fig. 2 and column 4).

14. With respect to claims 5, 11, 19-20, 29-31, 44, and 51-52, Good et al. disclose opposing side portions of the tension mask located with respect to a center of the tension mask being symmetrical (Fig. 2 and column 4).

15. Claims 6, 12, 22, 36, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Good et al. (USPN 5,583,391) and Moore (USPN 4,926,089) and further in view of Ohmae (USPN 6,388,370 B1).

16. With respect to claims 6, 12, 22, 36, and 40, Moore does not disclose each dummy bridge includes a pair of protrusions, each pair of protrusions respectively extending from adjacent strips of the plurality of strips, whereby a corresponding pair of protrusions forming a dummy bridge are disposed in facing relation to each other.

Ohmae discloses each dummy bridge includes a pair of protrusions (Fig. 1B, 14a and 14b), each pair of protrusions respectively extending from adjacent strips of the plurality of strips, whereby a corresponding pair of protrusions forming a dummy bridge are

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disposed in facing relation to each other. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the Good et al. and Moore inventions and disclose each dummy bridge includes a pair of protrusions, each pair of protrusions respectively extending from adjacent strips of the plurality of strips, whereby a corresponding pair of protrusions forming a dummy bridge are disposed in facing relation to each other, as taught by Ohmae. As disclosed by Ohmae (column 2, lines 30-34), this would ensure a cathode ray tube capable of reducing the doming amount and suppressing the occurrence of moiré stripes at the same time by forming protruding portions facing each other inside the slot aperture in the tension style shadow mask.

Allowable Subject Matter

17. Claims 13-17, 23-27, 41-42, and 46-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to disclose a value M being obtained by dividing a vertical pitch of corresponding ones of the plurality of real bridges of the tension mask by a vertical pitch of corresponding ones of the plurality of dummy bridges of the tension mask, the value of M decreasing in a stepwise relation in a direction from the center portion of the tension mask to the peripheral portion of the tension mask.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ohtake et al. (USPN 5,280,215) disclose (column 11, lines 18 – 23) symmetry with respect to the horizontal and vertical axes, and uniformity for each of four regions divided by the horizontal and vertical axes. Tsuji (USPN 6,455,991 B2) discloses a cathode ray tube with shadow mask.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 703 308-3535. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308-7722 for regular communications and 703 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0956.

Jurie Yun
May 8, 2003

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FEBRUARY 20 2003